MECHANICS
Research Communications

Volume 19, 1992

LIST OF CONTENTS AND AUTHOR INDEX

List of Contents to Volume 19, 1992

MECHANICS RESEARCH COMMUNICATIONS

1992 CONTENTS Vol. 19, No. 1

Scientific and Applied Communications

X.X. LEE and J.Q. CHEN	1	A Linearization Technique for Random Vibrations of Nonlinear Systems
M. GADIRAJU, J. PEDDIESON and S. MUNUKUTLA	7	Exact Solutions for Two Phase Vertical Pipe Flow
N. BOLEAU	15	Interprétation Probabiliste de la Viscoelasticité Linéaire
E. ZAHAVI	21	Analysis of Contact Problem in Leaf Springs
C.Y. WANG	29	Potential Field Between Finned Boundaries
A.N. SHERBOURNE and M.D. PANDEY	37	Some Anomalies of Shape Optimization in Plate Buckling
O. EL-F. BADR, M.N. FARAH and A. EL-M. BADRAN	45	A Study on Laminar Motion of a Viscous Incompressible Fluid Between Two Parallel Eccentric Cylinders
P. SUQUET	51	On Bounds for the Overall Potential of Power-Law Materials Containing Voids with an Arbitrary Shape
R.M. HAYTHORNTHWAITE	59	Isotropic Yield Criteria Developed from Simple Shear
S. SAVITHRI and T.K. VARADAN	65	A Simple Higher Order Theory for Homogeneous Plates

Announcements

14	Annual Israel Conference on Aviation and Astronautics, Tel Aviv, February 18-20, 1992
28	Textile Composites in Building Construction, Lyon, France, June 23-25, 1992
36	CISM News - 1992 Preliminary Program

MECHANICS RESEARCH COMMUNICATIONS

1992 Vol. 19, No. 2

CONTENTS

Scientific and Applied Communications

R.C. GUPTA	73	Laminar Magnetohydrodynamic Flow Development in a Channel
L. STAGNI	81	Elliptic Rigid Inhomogeneity with a Slipping Interface Embedded in an Infinite Plate
N.G. KAFOUSSIAS	89	MHD Free Convective Flow Through a Non-Homogeneous Porous Medium Over an Isothermal Cone Surface
J.J. RENCIS and Q. HUANG	101	Constant Curvature Generalized Plane Strain Formulation for Boundary Element Method
O. OLAOSEBIKAN	117	On Crack-Tip Displacement Fields Under Finite Strain
M. MASSOUDI and M. RAMEZAN	129	Heat Transfer Analysis of a Viscoelastic Fluid at a Stagnation Point
P.A. VOLTAIRAS and C.V. MASSALAS	135	Some Comments on the Nucleation Field of the Infinite Cylinder
G. PIJAUDIER-CABOT and L. BODE	145	Localization of Damage in a Nonlocal Continuum

Announcements

	88	CISM - 20th Anniversary Celebration

MECHANICS RESEARCH COMMUNICATIONS
1992 Vol. 19, No. 3

CONTENTS

Scientific and Applied Communications

R. USHA and R. RUKMANI	155	Arbitrary Squeeze Flow Between Two Rotating Disks
J-C. LUO	159	A New Class of Decomposition for Symmetric Systems
B.N. MANDAL and S. BANERJEA	167	On Forced Capillary Gravity Waves at the Interface Between Two Superposed Fluids Due to a Plane Vertical Wavemaker
P. WRIGGERS, E. STEIN, G. ZAVARISE and B.A. SCHREFLER	173	A Numerical Model for Thermomechanical Contact Based on Microscopic Interface Laws
Y. QINGYU and S. WEIPING	183	Solution of the Von Karman Equations of Circular Plates
A. CARINI	189	Extremal Formulations for the Single Finite Time Step Analysis of Elastoplastic Continua
E. RATHAKRISHNAN, G.H. MOUSTAFA, D. BISHT, and K.S. RAJAN	199	Experimental Study of Supersonic Axisymmetric Base Flow
M.E. FARES and M.N.M. ALLAM	209	Vibrations of an Anisotropic Rectangular Plate Including the Effects of Shear Deformation
V. BIRMAN	219	Exact Solution of Axisymmetric Problems of Laminated Cylindrical Shells with Arbitrary Boundary Conditions -- Higher Order Theory
N.L. DUNG	227	Three-Dimensional Void Growth in Plastic Materials
A.S. GUPTA	237	Hydromagnetic Wake in a Non-Newtonian Fluid

Announcements

158 EUROMECH 297, Lozari (Corsica), September 1-4, 1992

198 29th Polish Solid Mechanics Conference, Warsaw, Poland, September 2-6, 1992

208 29th Annual Technical Meeting of the Society of Engineering Science, La Jolla, CA, September 14-16, 1992

(Contents continued)

226 6th International Conference on Structural Safety and Reliability, Innsbruck, Austria, August 9-13, 1993

236 2nd International Conference on Nonlinear Mechanics, Wuchan, China, October 6-9, 1993

MECHANICS RESEARCH COMMUNICATIONS

1992 Vol. 19, No. 4

CONTENTS

Scientific and Applied Communications

A.G. MAVRAGANIS 251 On the Existence of Symmetric Translational-Rotational Motion in the Generalized Two-Body Problem

M. EISENBERGER 259 Buckling Loads for Variable Cross Section Bars in a Nonuniform Thermal Field

Y. SHAOPU and C. YUSHU 267 The Bifurcations and Singularities of the Parameterical Vibration in a System with Davidenkov's Hysteretic Nonlinearity

H. ANTES 273 A Boundary Formulation for the Dead Weight Integral in 2-D Elastodynamic Time Domain BEM

M. BELHAQ 279 4-Subharmonic Bifurcation and Homoclinic Transition Near Resonance Point in Nonlinear Parametric Oscillator

W. WU and Z. SIKORA 289 Localized Bifurcation of Pressure Sensitive Dilatant Granular Materials

C.A. SHANKARA and N.G.R. IYENGAR 301 Analysis of Composite Plates with Higher Order Shear Deformation Theory

A. GALKA, J.J. TELEGA and R. WOJNAR 315 Homogenization and Thermo-piezoelectricity

L. DORMIEUX 325 Stability Analysis of a Seabed Subjected to Wave Loading

A.H. ENGLAND and T.G. ROGERS 333 Loading and Unloading of an Elastic-Plastic Fibre-Reinforced Cantilever

N.L. DUNG 341 Prediction of Void Growth in Tensile Test

(Contents continued)

G. CURTI, F.A. RAFFA, and F. VATTA	351	Unbalance Response of Rotor Systems by the Dynamic Stiffness Method
M. KACZMAREK	361	On Kinematics in the Theory of Multiphase Media: Comparisons Between Two Traditions
I. DEMIR, J.P. HIRTH and H.M. ZBIB	369	Remarks on the Stress Field of the Somigliana Ring Dislocation

Announcements

258	IABEM-92 Annual Meeting and Symposium, Boulder, CO, August 3-6, 1992
288	33rd Annual Israel Conference on Aviation and Astronautics, Haifa, February 24-25, 1993
300	Volvo Awards for Low Back Pain Research 1993
375	CISM 1991 Report

MECHANICS RESEARCH COMMUNICATIONS

1992 Vol. 19, No. 5

CONTENTS

Scientific and Applied Communications

A. NAJEME, M. ZAGZOULE and J. MAUSS	379	Numerical Analysis of Flow in Arterial Stenoses
B.S. JAISWAL, A.G. UPLEKAR and V.M. SOUNDALGEKAR	385	Free Convection Effects on Flow Past an Impulsively Started Infinite Vertical Plate in Water at 4°C
Y. JIALIN and C. ZHENG	391	The Large Deflection Plastic Response of a Cracked Cantilever Beam Subjected to Impact
M. PAKDEMIRLI	399	Similarity Analysis of Compressible Boundary Layers for Arbitrary Profiles
I.W. PARK, J.S. KIM and F. MA	407	On Modal Coupling in Nonclassically Damped Linear Systems

(Contents continued)

J.C. MISRA, A.K. CHAKRABARTI, S.C. SAMANTA and S.C. MISRA — 415 — Influence of Thermomechanical Coupling on the Transient Thermoelastic Deformation of a Cylinder in the Presence of a Magnetic Field

P.D. WU and E. van der GIESSEN — 427 — On Improved 3-D Non-Gaussian Network Models for Rubber Elasticity

J. PEDDIESON, JR. and S.S. MUNUKUTLA — 435 — Flow of a Particulate Suspension in a Pipe With Unsteady Entrance Conditions

S. YAZDANI and S. KARNAWAT — 443 — A Unified Constitutive Theory for Brittle Solids

H.D. PARK and M.K. CHUNG — 449 — Refinement of Spanwise Distribution Models of Deviation Angle and Secondary Loss for Axial Flow Turbine

M. VASUDEVAIAH and R. PATTURAJ — 457 — Slow Viscous Rotation of Two Spheres

A. GURAN — 465 — Classification of Singularities of a Torque-Free Gyrostat Satellite

S. DE PONTE and G. GIBERTINI — 471 — On the Modeling of the Flow Past a Flat Plate

P. CAPODANNO — 475 — Sur Le Mouvement D'un Pendule a Suspension Elastique Contenant un Liquide

C.Y. WANG — 483 — Stability of a Column with Two Interior Hinges

Announcements

434 — First SES-ASME-ASCE Joint Meeting, June 6-9, 1993, Charlottesville, Virginia

MECHANICS RESEARCH COMMUNICATIONS

1992 Vol. 19, No. 6

CONTENTS

Scientific and Applied Communications

G. SILBER and S.-P. SCHOLZ — 489 — Blut als Fluid vom Gradiententyp

C.-H. LAMARQUE and A. STOFFEL — 495 — Parametric Resonance with a Nonlinear Term: Comparison of Averaging and the Normal Form Method Using a Simple Example

Z. RYCHTER — 505 — A Family of Accurate Plate Theories

(Contents continued)

D. WEICHERT and L. RAAD	511	Extension of the Static Shakedown-Theorem to a Certain Class of Materials with Variable Elastic Coefficients
G. IOANNIDIS	519	The Coupling Effect of Residual Stresses Initial Curvature and Loading Eccentricity on the Load Carrying Capacity of a Three-Bar Frame
B.D. HULL, T.G. ROGERS, and A.J.M. SPENCER	527	Controllable Flows of Ideal Fibre-Reinforced Fluids
A. DROZDOV	535	Constitutive Model of a Viscoelastic Material at Finite Strains
H.A. SOSA	541	On the Modelling of Piezoelectric Laminated Structures
N.G. ZAMANI, M. ESTEGHAMATIAN and J.F. PORTER	547	Some Remarks on the FEM Modelling of a Semi-Elliptic of a Semi-Elliptic Flaw
J.S. CHEN, A. KADIC-GALEB, M. FERRARI, and T.M. DEVINE	555	Embrittlement of Nano-Scale Structures
R.W. ZIMMERMAN	563	Hashin-Shtrikman Bounds on the Poisson Ratio of a Composite Material
R.M. HAYTHORNTHWAITE	571	Flow Initiation in Loose Frictional Solids
		Letter to the Editor
J.J. GOLECKI	579	Comments on the Paper: "On Single-Valuedness of the Papkovich-Neuber General Solution in Two-Dimensional Elasticity," by W. Wang and M.Z. Wang
W. WANG and M.Z. WANG	581	Answer to J.J. Golecki's Comments
		Announcements
	518	2nd International Conference on Nonlinear Mechanics (ICNM II), August 23-26, 1993, Beijing, China
	526	2nd Conference on Recent Advances in Active Control of Sound and Vibration, April 28-30, 1993, Blacksburg, Virginia
	562	IABEM 93, International Symposium on Boundary Element Methods, August 16-19, 1993, Braunschweig, Germany
	583	Contents and Author Index of Vol. 19, 1992

2